**Prevalence of transmitted drug resistance in ART-naïve individuals with recent HIV infection in Victoria between 2010 and 2021.**

D'Costa J[1], Gooey M[1], Sameer R[1], Macksabo L[1], Mavroulis D[1], Williamson DA[1,2], Chibo D[1].

[1]Victorian Infectious Diseases Reference Laboratory, Doherty Institute
[2]Department of Infectious Diseases, University of Melbourne, Australia

**Background:**
Treatment as prevention and pre-exposure prophylaxis have contributed to a decline in HIV transmission rates throughout Australia. Despite this, transmitted drug resistance (TDR) continues to be an important issue in the management of HIV infection. Although current Australian treatment guidelines include integrase inhibitors in recommended first-line treatments, prior to initiation of therapy a baseline drug resistance genotype characterizing only the protease (PR) and reverse transcriptase (RT) regions are recommended. Testing of the integrase gene should be included if TDR to integrase inhibitors is a concern. With this in mind, we sought to determine the prevalence of TDR to this drug class, along with the prevalence of TDR to the PR and RT inhibitors in individuals with recent HIV infection.

**Methods:**
Baseline drug resistance genotyping (PR and RT) was performed as part of standard-of-care on samples collected between 2010 and 2021 from 942 individuals diagnosed in Victoria with serological evidence of HIV infection within the previous 12 months. Of these, 802 patients were further genotyped for resistance to integrase inhibitors. Generated sequence data was analyzed using the Stanford HIV drug resistance database.

**Results:**
Overall, 83 individuals (8.8%) had at least one drug resistance mutation causing some level of resistance to PR and RT inhibitors which ranged from 15.7% in 2017 to 4.1% in 2020. Of the 802 patients genotyped for resistance to integrase inhibitors, 4 (0.5%) were found to contain a major resistance mutation. Accessory mutations were more common, ranging from 1.3% in 2013 to 8% in 2021.

**Conclusion:**
There is continuing evidence of TDR to PR and RT inhibitors. Despite the widespread use of integrase inhibitors, there is minimal evidence of TDR to this drug class. Continued monitoring and surveillance of TDR is warranted to further guide laboratory testing and treatment decisions.

**Disclosure of Interest Statement:**
None